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# NOTES

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FISHES FROM STREAMS AND LAKES OF NORTHEASTERN CALIFORNIA  
NOT TRIBUTARY TO THE SACRAMENTO BASIN.

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By CLOUDSLEY RUTTER,

*Naturalist, United States Fish Commission Steamer Albatross.*



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The fishes forming the basis of the following report were collected in 1898 and 1899 while studying the distribution of the fishes of the Sacramento Basin. The collection was studied at Leland Stanford Junior University, where special facilities for study and comparison were afforded by the ichthyological museum.

The localities from which the collection was obtained represent four basins, now distinct, though at one time probably tributary to Lake Lahontan. These basins are Grasshopper Lake, Eagle Lake, Honey Lake, and Truckee River.

Grasshopper Lake is an alkaline pond, with no outlet, at the southern end of Grasshopper Plains, in Lassen County, and contains no fishes. A species of *Agosia* was found to be abundant in a spring emptying into the lake.

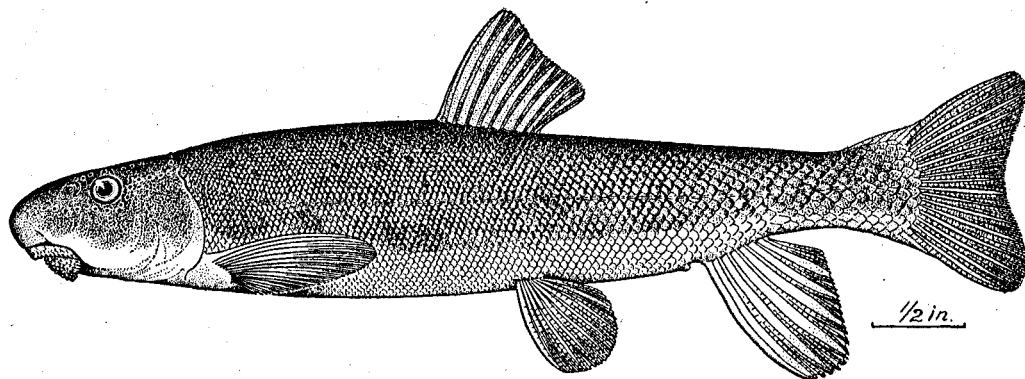
Eagle Lake also has no outlet, the lowest point in the surrounding watershed being over 50 feet above the surface of the lake. Its water is slightly alkaline, though very clear, and near the shore supports thick aquatic vegetation. Only two species of fishes were obtained, the Eagle Lake white-fish (*Rutilus olivaceus*) and a sucker (*Chasmistes chamberlaini*) here described as new. A trout is known to inhabit the lake, but none was obtained.

Two streams were fished in Honey Lake Basin—Willow Creek and Susan River. The former rises at the lowest point in the Eagle Lake watershed, and its upper part is a rough mountain stream. It was fished about 15 miles north of Susanville, where it passes through an extensive meadow. Susan River rises on the eastern slope of Lassen Butte, and above Susanville is a mountain torrent. Its lower part lies in the plains adjacent to Honey Lake and is dry during part of the year.

Collections were made in three streams of Truckee Basin—Little Truckee River, Sage Hen Creek, and Prosser Creek. The former, a considerable stream, 15 to 30 feet wide, with very rocky bottom, drains Webber Lake and Independence Lake, and was fished a short distance below the outlet of the latter. Sage Hen Creek is tributary to Little Truckee River. It is but a small stream, flowing through a narrow wooded valley. Prosser Creek is tributary to Truckee River and drains the table-land north of Truckee. It was fished near Prosser Bar, where it is a meadow stream from 6 to 10 feet wide and 6 inches to 6 feet deep.

The fish fauna of these waters is very limited. Three species are described as new. The collection consists of 9 native and 2 introduced species, distributed as follows: One species, *Agosia robusta*, is common to three of the four basins and is probably to be found in the other basin, Eagle Lake. Another, *Rutilus olivaceus*, is found in all the basins except that of Grasshopper Plains. *Chasmistes chamberlaini*,

of Eagle Lake, is not found elsewhere. Honey Lake and Truckee River basins have 5 native species in common—*Pantosteus lahonton*, *Catostomus tahoensis*, *Rutilus olivaceus*, *Agosia robusta*, and *Cottus beldingii*. *Salmo irideus* is found in both basins, but it has been introduced into Truckee Basin, and possibly into Honey Lake Basin. *Leuciscus egregius* is also known from Honey Lake Basin, and *Coregonus williamsoni* and *Salmo henshawi* from Truckee Basin. *Salvelinus fontinalis* has been introduced into the latter basin.



PANTOSTEUS LAHONTON Rutter, new species.

**Pantosteus lahonton Rutter, new species.**

Head 4.5 in length, depth 5.5; eye 6 in head; D. 10 or 11; A. 7; scales 17–81 to 96–12, 47 to 50 before dorsal. Body terete, caudal peduncle but little compressed; interorbital slightly convex, or flat, width of bone 2.8 in head; eye posterior, 3 in snout, 2.5 in interorbital space, 1.5 in distance between eye and upper end of gill-opening; snout equal to half of head, broadly rounded both vertically and horizontally, projecting beyond the large mouth; 4 rows of papillæ on upper lip, 4 rows across symphysis of lower lip, 10 papillæ in an oblique row from corner of mouth to inner corner of lobe of lower lip; isthmus broader than interorbital, equal to distance between pupils; fontanelle present, but less than half width of pupil in a 6-inch specimen; dorsal inserted from 49 to 52 hundredths of body from tip of snout; ventrals inserted under ninth ray of dorsal, halfway between tip of snout and tip of middle caudal rays; caudal 1.5 in head, deeply emarginate, not forked; pectoral 1.3 in head; height of dorsal about 1.4 in head, the base equal to snout, margin slightly emarginate; ventrals 1.7 to 1.8 in head. Very dark, almost black above, abruptly paler below, lower fins slightly dusky. Maximum length, about 6 inches.

Closely related to *Pantosteus generosus*, but with the following differences, determined by comparison with specimens of that species of the same size from Provo, Utah. The Provo specimens have the dorsal 10 or 11 instead of 9 or 10, as described by Jordan & Evermann.

Species.	Interorbital space.	Scales in lateral line.	Scales before dorsal.	Distance of ventrals from snout equals distance from their insertion—	Caudal fin contained in head.	Width of lower jaw (cartilage) in head.	Rows of papillæ across symphysis of lower lip.	Papillæ on lower lip in oblique row from corner of mouth.
<i>P. lahonton</i> ...	Flat ....	81 to 96	45 to 50	To tip of middle caudal rays.	1.2	3.5 to 4, margin convex.	4	10
<i>P. generosus</i> ...	Convex.	77 to 87	41 to 45	To middle of middle caudal rays.	1	3 to 3.7, margin nearly straight.	2	7

Found in abundance in Susan River, and also in Little Truckee River and Prosser Creek. Types (No. 50587, U. S. Nat. Mus.) from Susan River, collected by Rutter and Chamberlain.

**Catostomus tahoensis** Gill & Jordan.

Head 4.4 in length, 5 to tip of middle caudal rays; depth 4.8 in length; width of head through opercles equal to its depth; eye 5.5 in head, 2.5 in snout; 2.7 in interorbital space, 1.7 in distance from eye to upper end of gill-opening (by eye is meant the orbital opening, not the eye-ball nor socket); interorbital (bone) 2.3 in top of head; width of isthmus 3.8 in head, a little less than distance between eye and gill-opening, equal to width of opercle, and also equal to distance between corners of mouth. (Measurements made on a 7.3 inch specimen.) D. 11; A. 7; scales 17-89 to 105-16. Body rather slender, profile steep; snout blunt; mouth large, with full lips, covered with rather coarse papillae which do not become much smaller toward margin of lips; upper lip with about six rows of much-crowded papillae; lower lip with two rows across symphysis, and about 8 papillae in a longitudinal row through lobes; posterior margin of lower lip reaching vertical through posterior nostril. Orbital rim but little developed, middle ridge of skull broad, the interorbital space rather high and rounded. Insertion of dorsal in middle of body, its length 1.4 in its height. Insertion of ventrals under fifth ray of dorsal. Length of caudal 1 to 1.1 in head, rather deeply forked, middle ray 1.6 in longest. Anal reaching past base of caudal, its height equaling length of caudal; length of ventrals equals height of dorsal; pectoral a little shorter than caudal. Least depth of caudal peduncle 2.6 in head. Lateral line complete, straight. Peritoneum black. Color nearly black above, slightly mottled with pale yellowish below.

Taken in Willow Creek, Susan River, Little Truckee River, and Prosser Creek. Description based on specimens from Susan River.

**Chasmistes chamberlaini** Rutter, new species.

One young example, 1.7 inches long, and a dried head 3.3 inches long, which can not be referred to any hitherto described species, were obtained at Eagle Lake. Eye 7 in head, 3 in snout, 2.8 in interorbital bone, 2 in distance from eye to upper end of gill-opening. Premaxillary spines forming a prominent hump, maxillary inclined about 40°, falling far short of anterior nostril, its length from free end to tip of snout just equal to snout in front of nostril, 3.2 in head; lower jaw 3.5 in head. Interorbital (bone) 2 in head, considerably arched transversely; a low, sharp longitudinal ridge along middle suture, showing even in the young example. Nasal spines very prominent; fontanelle closed, covered by a thin bone. Mucus canals prominent, but probably intensified in dried specimen. Lips thin, two rows of papillae on upper; lower incised to base, lobes small, with scattered papillae. (The above data from the dried head.)

Cross series of scales 93; D. 10; A. 7. Origin of dorsal in middle of body, ventrals inserted under sixth or seventh ray of dorsal. Pectoral broad, reaching two-thirds distance to ventrals. Ventrals scarcely reaching vent, the outer two rays longest. Anal low, when depressed reaching halfway to caudal. Caudal peduncle long and slender.

Has smaller scales than any other species of the genus. The dorsal and anal are the same as in *C. copei*, but it differs from that species in the broad interorbital and the papillose lips, in addition to the small scales. The sharp ridge on interorbital also seems to be a distinctive character.

Named for Mr. F. M. Chamberlain, of the U. S. Fish Commission steamer *Albatross*.

Type (No. 50588 U. S. Nat. Mus.). Collected in Eagle Lake by Rutter and Chamberlain.

**Leuciscus egregius** (Girard).

The specimens here noted are not quite so deep as specimens from Winnemucca, Nev., but otherwise can not be distinguished. They have two red stripes along side, with a darker stripe between. Lower part of cheek yellowish, with some yellow along edge of belly. Scales in lateral line 55 to 63. D. 8 or 9; A. 8 or 9. Common in Willow Creek and Susan River.

**Rutilus olivaceus** (Cope). *Eagle Lake White-fish*.

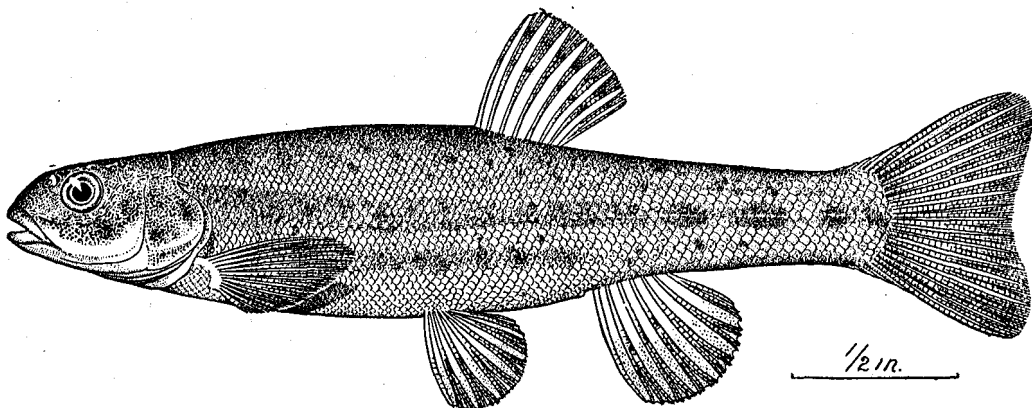
This species was met with in Eagle Lake and Willow Creek, where it attains a length of 8 inches. Head 3.3 to 3.7 in body; depth 3.7 to 4.5; eye 4.4 to 5 in head; insertion of dorsal 0.53 to 0.57 of body from snout. Scales 15-58 to 64-8; D. 8; A. 8; teeth 5-4 or 5-5. Body elongate, little compressed, little elevated, regularly curved from occiput to dorsal, highest over tip of pectoral. Head long; mouth oblique; jaws even, the lower forming a distinct though very obtuse angle with lower profile. Premaxillary on level with lower half of pupil. Top of head slightly concave. Lateral line but little decurved. Tip of depressed dorsal over front of anal. Caudal peduncle long, but little tapering, its length from anal equal to head behind front of eye, its thickness over end of anal equal to snout. This species differs from *Rutilus bicolor* in the finer scales and in having the same number of rays in the anal that it has in the dorsal, *R. bicolor* having one fewer in the anal.

***Agosia robusta* Rutter, new species.**

Body heavy, highest above insertion of pectorals; the ventral outline curved almost as much as the dorsal. Head 3.8 to 4 in body; snout blunt, but little overlapping the premaxillary and never extending beyond it; mouth oblique, barbels usually absent, present on 10 to 50 per cent of specimens from any one locality. Fins small; D. 8; A. 7; pectoral about equal to head behind nostril, variable; caudal moderately forked, middle rays two-thirds length of longest; rudimentary caudal rays forming prominent keels along upper and lower edges of tail; margin of anal slightly rounded, the anterior rays not all produced, not extending beyond posterior rays when fin is depressed. Lateral line nearly always incomplete, but with scattered pores frequently extending to base of caudal; scales 56 to 77, varying about 12 in any one locality. Usually two dusky lateral stripes, the upper extending from snout to caudal, the lower branching off from the upper behind the head and ending along base of anal; cheek abruptly silvery below lateral stripe; tinged with orange about lower jaw, upper end of gill-opening, and at base of lower fins.

Type (No. 50589 U. S. Nat. Mus.). Collected in Prosser Creek by Rutter and Atkinson.

Taken in Spring Creek, Willow Creek, Susan River, Little Truckee River, and Prosser Creek.



AGOSIA ROBUSTA Rutter, new species.

***Coregonus williamsoni* Girard.**

Abundant in streams tributary to Truckee River. A "native white-fish," probably this species, is reported from Bigler (Tahoe) and Donner lakes in the California Fish Commission Report for 1883-84.

***Salmo henshawi* (Gill & Jordan). *Lake Tahoe Trout*.**

Occurs in only the Truckee Basin, and taken in Little Truckee River, Sage Hen Creek, and Prosser Creek. The black spots of sides much larger and fewer than in *Salmo irideus*.

***Salmo irideus* Gibbons. *Rainbow Trout*.**

Readily distinguished from the above by the very small and numerous black spots, as well as by the absence of the red blotch on inner edge of mandibles. Introduced into Truckee Basin, and possibly also into Honey Lake Basin. It was observed in Susan River and Prosser Creek.

***Salvelinus fontinalis* (Mitchill). *Brook Trout*.**

This species has been introduced into Prosser Creek, where specimens were taken.

***Cottus beldingii* Eigenmann & Eigenmann. *Blob*.**

Palatine teeth wanting; no prickles on skin; lateral line broken under posterior rays of dorsal, sometimes a few pores on caudal peduncle, usually none. Top of head covered with minute pimples. Dorsal spines 6 to 8, dorsal rays 15 to 19, anal rays 11 to 14.

Found in Susan River, Little Truckee River, Sage Hen Creek, and Prosser Creek.